

RESISTANCE TESTING OF URETHANE BRIDGE COATINGS TO METHYL ETHYL KETONE

1. SCOPE: This method outlines the use of methyl ethyl ketone (MEK) for chemical resistance evaluations of urethane bridge coatings. This method follows the procedure used in ASTM D 4752-95 "Standard Test Method for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub".
2. APPARATUS AND MATERIALS:
 - 2.1. Test Panels (4 inches x 8 inches)
 - 2.2. MEK (Methyl Ethyl Ketone)
 - 2.3. Cheese Cloth
 - 2.4. Squeeze Bottle
 - 2.5. Solvent Resistant Gloves
3. PROCEDURE:
 - 3.1. Laboratory testing will be performed on a sample prepared by pulling a draw down of the primer (2-4 mil wft) and allowing it to air dry for 24 hours. A draw down of the urethane top coat (2-4 mils wft) will be placed over the primer after the 24 hour air cure. This coat will be air dried for 24 hours then oven dried at 110 °C for 24 hours. After the oven curing period, chemical resistance testing will be performed as follows.
 - 3.2. Select an area of the coated surface to be tested. Clean the area with tap water and a dry cloth. Measure the dry film thickness of the coating in the area to be tested. Mark a section of the cleaned area, measuring six (6) inches by one (1) inch with a solvent resistant marker, in which to perform the MEK double rubs.
 - 3.3. Fold a twelve (12) inch square piece of cheese cloth so that the thickness is doubled and saturate it until dripping wet with MEK. Place an index finger in the center of the cheese cloth and gather the remaining cloth. With the index finger at a 45 degree angle to the surface, rub with moderate pressure over the marked area. Do not allow more than ten (10) seconds to elapse between wetting the cloth and beginning to rub the coating. Wet the cloth as often as needed without lifting it from the surface. One forward and backward motion constitutes one double rub. A control test should be done adjacent to the MEK test area. The control test uses only a dry clean cloth rubbed in the same manner as the original test to establish the effects of the cloth on the coating.

4. REPORT: The report should reflect the rating assigned to the coating based on the table below.

Scale for Resistance Rating

<u>Resistance Rating</u>	<u>Description</u>
5	No effect on surface; no urethane on cloth after 150 double rubs
4	Burnished appearance in rubbed area; slight amount of urethane on cloth after 150 double rubs.
3	Some marring and apparent depression of the film after 150 double rubs.
2	Heavy marring; obvious depression in the film after 150 double rubs.
1	Heavy depression in the film but no actual penetration to the substrate after 150 double rubs.
0	Penetration to the substrate in 150 double rubs or less.

- 4.2 Acceptable coatings will not have any heavy marring or penetration of the coating. All coatings receiving a rating of 3, 4, or 5 will be accepted for project use.

APPROVED _____
Director
DIVISION OF MATERIALS

DATE 12/27/02

Kentucky Method 64-256-02
Revised 12/27/02
Supersedes 64-256-00
Dated 1/13/00

Km25602.doc